

Army Aviation Composite Risk Management Information

Contingent Risk Management



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A Quick Glance at UAS Accidents

BILL RAMSEY
U.S. ARMY COMBAT READINESS CENTER

With current combat operations in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), Unmanned Aircraft Systems (UASs) continue to support the Soldiers on the ground. The UAS is a key player in our war against terrorism both stateside and overseas.

As with manned aircraft systems such as the UH-60, OH-58D, and AH-64, the UAS is prone to the same causes and effects that result in accidents. Listed below you will find accident information starting with Fiscal Year 2004 (FY04). The breakout will cover Class A through C accidents for the Hunter, Shadow, and Raven UAS and the total cost of the mishap in dollars.

RQ-5A (Hunter)

Accident Class	A	B	C	Total	Total Cost	Hours Flown
FY 2004	1	1	2	4	\$1,528,861	4,616.2
FY 2005	0	0	5	5	\$302,906	6,482.1
FY 2006	4*	0	1	4	\$3,302,906	5,395.2**
Total Count	5	1	8	13	\$5,134,673	16,956.4

*Includes one MQ-5B (Hunter).

Hunter Class A Accident Descriptions:

Case 1: Aircraft failed to respond to air vehicle operator input during external pilot training and crashed in the traffic pattern.

Case 2: UAS was on final approach to landing when the lighting system failed and the controller lost visual contact.

Case 3: UAS experienced failure of the forward engine during flight.

RQ-7A/B (Shadow)

Accident Class	A	B	C	Total	Total Cost	Hours Flown
FY 2004	0	1	2	3	\$240,000	13,130.2
FY 2005	0	16	18	34	\$7,240,739	37,789.9
FY 2006	0	32	17	49	\$7,533,466	52,613.9**
Total Count	0	49	37	86	\$15,014,205	103,534.7

The Shadow Class B accidents for FY06 indicate there were 24 suspected materiel failures, which included:

- Engine failures
- Ignition failures
- Generator failures

There were four accidents attributed to human failure, which include:

- Launching of UAS while at 50 percent throttle or idle speed
- Launching of UAS without engine oil

RQ-11 (Raven)

Accident Class	A	B	C	Total	Total Cost	Hours Flown
FY 2004	0	0	5	5	\$100,000	1,598.0
FY 2005	0	0	19	19	\$560,042	17,159.1
FY 2006	0	0	42*	44	\$757,015	9,739.4**
Total Count	0	0	66	68	\$1,417,057	28,496.7

*Note: During review of the accident data base, two Raven accidents were classified as Class B accidents with a cost of \$200,000 each. It is suspected an error was made in reporting the cost of the mishaps; therefore, for this article, both accidents were placed in Class C column.

A review of the FY06 Raven Class C accidents indicated the following as causes for the reported accidents (27 of the 42 incidents were attributed to one of the problems listed below):

- Lost communication feed
- Sporadic interference
- Lost video link
- Lost computer link

FY05 and FY06 UAS Breakdown

Mission Combat: 70% Training: 24% Unknown: 6%

Cause Factors

Materiel Failure
(Definite or Suspected)
Human Error
(Definite or Suspected)
Environmental

Shadow, RQ-7A/B
Hunter, RQ-5A
Raven, RQ-11
*IGNAT RQ-11
Not reported:

*Note: IGNAT accident data was not included in this article.
**Includes hours through July 2006.

Editor's note: Data chart provided by Scotty Johnson, Air Safety Specialist for UAS, Aviation Branch Safety Office, Fort Rucker, AL, and are current from the USACRC database as of 25 June 2006.

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